Notebook Series -- Notebooks by Edison
Notebook, N-17-00-00.8

This undated notebook is a continuation of N-17-06-28. It was used by Edison, probably in July 1917, to record research on the measurement and amplification of sound for the U.S. Navy during World War I. Included are notes on the construction of mirror galvanometers and other measuring devices, numbered U18 and U24-U35, as well as an experiment with a "silver carbon telefone." Additional entries made on board ship near Sandy Hook, New Jersey, relate to Edison's tests of experimental amplifying equipment for direction finding and detecting sound under water. The notes indicate that Jerry T. Chesler and Absalom M. Kennedy assisted Edison in this work. The front cover is labeled "U.5." The pages are unnumbered. Approximately 20 pages have been used.

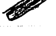
17-(00.00)

Re Made U mirrors —

U26 mirror only fairly stable to shock

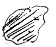
U18 Quite stable as it once was

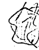
U27 Quite Stable

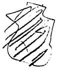
U24  fairly stable

U25 Very stable

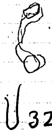
17-(00-00)

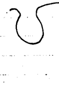
U28.  Extremely Stable

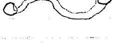
U29-  only fairly stable

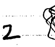
U30  only fairly stable

U31- somewhat unstable







U32  fairly stable

U33. Cant get in galv fix it

U34 pretty Stable

U35 Wobbles bad.

17-(00-00)

Experiments with Silver Carbon Telefone

Limit, hearing phonograph in box 20ft with Bell as Transmitter 30 ft Silver Carbon
This Expmt is NG - Jerry hears it thru the air

He now uses Stethoscope tubes + goes into another building -
get music clear + good in Carbon + only some notes in Bell -

We now stuff some cloth in funnel of phonograph - Can with Carbon hear Music but very faint. - 16ft. from Phonograph -

Bell - Can just make out tune at 5 ft.

On board - off End Hook.

The boat rolls considerably when Engine running + boat rolling some phonoplex 1½ got with 1 audion 5@6" throw keeps on scale fairly well —

Scale too narrow with regular Tuner - should be twice as wide.

There is some white Caps + many vessels laying inside on account of storm outside — been blowing for 2 days from North East with rain

Think the pivoted Tuner will be necessary for

17-(00.00)

this work—

We only have 7 mil amp
on the 6 audion bulbs, the
batteries are evidently low

I notice as boat swings
around the Zero changes
dont understand this
as strong tuning magnet
ought to hold it

The tuned 1½" phonoplex
array is fairly steady
very little static
jump—

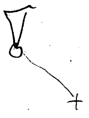
17-(00.00)

So far this is a good test for insulation, 2 days rain, boat damp ~~[illegible]~~ no attempt at insulation only using the small rubber covered wires, Big Mag + audions are well insulated but Condensers + batteries + Everything else right on boat boards -

tuners also -

Big Tug + another - both in sight: 2500 yds get 1/2" throw - on - 270 Milamp on tuners This is first place found - the 1/2" is irregular may be 2 steamers interfere

17-(00.00)



Went to 600 on Turner

Notice When 250 microamp on Turner Mirror spot keeps Zero with 2" although boat rolling very violently

Now 240 microamp-- Boat

gives 1" throw here

Boat here & Tug

1500 yds now

240 Mil amp but 270 wipes
tuning out. also
going to 200 wipes it
out —
boat being on wrong side
is getting weaker
tug stopped at Highlands

got a slight tuning at
100 Mil amp

Now 67 Mil amp Spot Keeps
with 2" of Zero & OK

We ran down to 7 mil amp on turned & Evan opened it — The spot light was OK & practical - at 7 Milamp spot steady but moved over ~~[illegible]~~ 3 or 4" of scale as boat moved this dont bother at all —

Probable reason is low Res of Water phone (old rag bell) 90 ohms whereas

phonoplex Coil is 1250 ohms
although 2 steamers
in sight got nothing
at low Milamp
now going up in
Mil amp

shews 1/8 V.G at 38 Milamp
Big Str coming into
Ambrose 5 miles away
42 Milamp better

also a tug 1500 yds in sight
right angles to Horn

Kennedy thinks the big
str 4 miles away is a Destroyer

22 @ 23 was milamp
on phonoplex
6 Vibs sec when
we started with
This Mirror
V25 —

tug now in front of bow
1500 yds - 1/4" swing irregular
& uncertain — big ship
not in sight - Rain makes
a fog so cant see far -

Side wheeler in sight
4000 yards & 2 other
boats

at 245 Milamp get
1/2 to 1" throw —

up to 600 Milamps -
Spot steady at Zero
no matter how boat rolls
or pitches — get nothing
from 245 up —

17 ([illegible])

Boat made awful
lurge 20° everything
swashed about
but Zero kept OK
with old phone in
sea

Went to 1000 mil amp
saw no signs —
We now take off battery
to go from 0 to 300
mil amp —

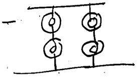
Boat 250 yds away
Zero to 1" irregular

All these results
so far are Extremely
Doubtful —

With switch open
at Mirror we
get the throw irregularly
of 1/2 to 1" & its
not from the sea/
Evidently —
245 Milamp on field
seems a point where
mirror is sensitive
to a swing when
switch open —

As we only got 7 Mil
amp to bulbs we
multiplied arc 2

more WE Induction
Coils -

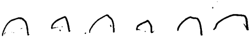


got 42 mil amp
in bulbs - now
very much more
sensitive -
WE rigged up switch
& could throw out
sea phone & put in
another phone -
with boat phone in
Zero with Sea
phone in

get from zero to 1 1½
etc — at times
2" for several seconds
Str 1000 yards -
all uncertain as 1
min ago he said
3500 yds —
Either this is line
of rope or its steaming
No doubt something
Comes from the
sea but its not
a steady throw
but fairly so
wrong now & then

Note that we get
Tuning at 42 & 245 –
What is it – ~~Horn~~ Rope or ~~or~~
audion parts, or Condenser and inductor Syntony
or Sleeves – 42 is
about 7 @ 7½ –
Cant say what
245 is – probably
15 or around that.
a Multiple Evidently –
But What is it
Must find out

17 [illegible]



We now put in the Long
Bell of 940 ohms just
wound by Milner —
This is very much
more sensitive at
245 — When USC
boat near vibrated
nearly off scale
when 2500 yds
away vibrations
about 2200 to 2½"

We get jump on Mirror
when afterwards
near big Cannon

at hook go off —
jumps from Dead Zero
to $1/2''$ = 620 mil amp
was on tuner —